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EXAMINER

MASON, DONNA K

ART UNIT	PAPER NUMBER
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2111

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/896,769

Applicant(s)

ABRAMSON ET AL.

Examiner

Donna K. Mason

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10-14, 20-22 and 27 is/are rejected.
- 7) ☒ Claim(s) 5-9, 15-19, 23-26 and 28-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed May 16, 2005, regarding the 35 USC 102(e) rejection of claims 1, 11, 21, and 27 and the 35 USC 103(a) rejection of claims 2-4, 12-14, and 22 have been fully considered but they are not persuasive.

Applicant argues that Ludtke does not disclose "reclaiming resources assigned to said work item whenever said coherency signal is generated", as recited in independent claims 1, 11, 21, and 27. However, as defined in Applicants specification, "reclaim" means to free or reuse resources associated with a work item (paragraph [0050]: on page 16, lines 3-5). Ludtke discloses reclaiming bandwidth, which is a resource assigned to the work item. When a work item, or service, is removed, the associated resource, or bandwidth, is reclaimed (see, e.g., column 7, line 67 to column 8, lines 1-8).

Therefore, the Examiner cannot allow claims 1-4, 11-14, 21, 22, and 27.

2. Applicant's arguments, see pages 12-14, filed May 16, 2005, with respect to the 35 U.S.C. 102(e) rejection of claims 1, 10, 11, 20, 21, and 27 as being anticipated by Brief; the 35 USC 102(e) rejection of claims 1, 5-10, 11, 15-20, 21, and 23-30 as being anticipated by Dussud; and the 35 USC 103(a) rejections of claims 2-4, 12-14, and 22 as being obvious over either Brief or Dussud in view of the *Universal Host Controller*

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Interface (UHCI) Design Guide, by Intel, have been fully considered and are persuasive.

The rejections of claims 1-30 have been withdrawn.

With regard to the rejections of claims 1-4, 10-14, 20-22, and 27 in view of Brief, the Examiner is persuaded that Brief does not expressly disclose where the coherency signal is independent of the work item, as recited in the independent claims. Therefore, the Examiner has withdrawn the rejections of claims 1-4, 10-14, 20-22, and 27 in view of Brief.

With regard to the rejections of claims 1-30 in view of Dussud, the Examiner is persuaded that Dussud does not expressly disclose where a work item may be removed, as recited in the independent claims. Therefore, the Examiner has withdrawn the rejection of claims 1-30 in view of Dussud.

Drawings

3. The drawings were received on July 8, 2004. These drawings are not acceptable.
4. The drawings are objected to because Fig. 1 must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement

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Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

5. The drawings are objected to because Figs. 8A, 8B and 8C should be labeled consistent with the specification, for a better understanding of the drawings. (See 37 CFR 1.84(o)).

The text of 37 CFR 1.84(o) is provided to Applicant, as follows:

(o) Legends. "Suitable descriptive legends may be used subject to approval by the Office, or may be required by the examiner where necessary for understanding of the drawing. They should contain as few words as possible."

More specifically, it appears that Applicant is using a "black box" technique to illustrate the drawings. Therefore, descriptive legends (e.g., as shown in Fig. 1) are required in Figs. 8A, 8B and 8C for a clear understanding of the drawings. These legends should use terminology consistent with the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 11, 21, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,763,391 to Ludtke.

With regard to claims 1 and 11, Ludtke discloses a method including removing a work item from an enabled bus schedule data structure (column 9, lines 17-24) and generating a coherency signal independent of the work item in response to removing the work item (column 9, lines 35-43)), and reclaiming resources assigned to the work item whenever the coherency signal is generated (column 9, lines 56-60). Ludtke also discloses a machine-readable medium that provides instructions, which when executed by a machine, cause the machine to perform the claimed method (column 9, lines 6-16).

With regard to claims 21 and 27, Ludtke discloses an apparatus and computer system, the apparatus including: a command register including a command signal bit to indicate a removal of a work item from an expansion bus schedule data structure including a plurality of work items, wherein the command signal bit is independent of the work item (column 9, lines 17-24); a status register including a status signal bit to notify an expansion bus host controller driver that resources assigned to the work item may be reclaimed (column 9, lines 56-60); and a microcontroller to process the expansion bus schedule data structure and to modify the status signal bit of the status register in

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response to the removal of the work item from the expansion bus schedule data structure (column 9, lines 35-60).

Therefore, Ludtke reads on the invention as specified in claims 1, 11, 21, and 27.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2-4, 12-14 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludtke in view of *Universal Host Controller Interface (UHCI) Design Guide*, Revision 1.1 by Intel ("Intel").

As discussed above with regard to the 35 USC 102(e) rejection, Ludtke discloses all the features of claims 1, 11 and 21. With regard to claims 4 and 14, Ludtke also discloses the method, further including: generating a command signal in response to removing the work item from the enabled expansion bus schedule data structure; where, generating a coherency signal utilizing an expansion bus host controller in response to removing the work item from the enabled expansion bus schedule data structure includes generating a status signal utilizing the expansion bus host controller in response to generating the command signal (*see generally*, column 9, lines 17-24 and lines 35-60).

Ludtke does not expressly disclose all the features of dependent claims 2, 3, 12, 13, and 22.

Intel discloses where the enabled expansion bus schedule data structure comprises an asynchronous schedule including a plurality of queue heads and removing the work item from the enabled expansion bus schedule data structure includes unlinking a first queue head of the plurality of queue heads from the asynchronous schedule; and where the plurality of queue heads includes a second queue head, the second queue head includes a horizontal link pointer to the first queue head, and unlinking the first queue head from the asynchronous schedule includes modifying the horizontal link pointer of the second queue head (*see generally*, section 1.2.3; section 3.4.2; Fig. 4; and Fig. 11).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Intel with Ludtke. The suggestion or motivation for doing so would have been to increase system performance through use of the high transfer rates of the Universal Serial Bus (USB).

Therefore, it would have been obvious to combine Intel with Ludtke to obtain the invention as specified in claims 2-4, 12-14 and 22.

10. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludtke in view of U.S. Patent No. 6,205,501 to Brief, et al. ("Brief").

As discussed above, with regard to the anticipation rejection of claims 1 and 11, Ludtke discloses all the features of claims 1 and 11.

Ludtke does not expressly disclose where reclaiming the work item in response to generating the coherency signal includes freeing a portion of the memory associated with the work item, as recited in claims 10 and 20.

Brief discloses reclaiming the work item in response to generating the coherency signal includes freeing a portion of the memory associated with the work item (see *generally*, column 8, lines 63-67 to column 9, lines 1-31).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Brief with Ludtke.

The suggestion or motivation for doing so would have been to provide a more efficient system by freeing unused memory.

Therefore, it would have been obvious to combine Brief with Ludtke to obtain the invention as specified in claims 10 and 20.

Allowable Subject Matter

11. Claims 5-9, 15-19, 23-26, and 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowability of claims 5-9, 15-19, 23-26, and 28, 30, is the inclusion of the limitation, "generating a coherency signal utilizing said copy of said work item," as recited in claims 5 and 15, and the limitation, "modify said status signal

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bit of said status register utilizing said copy of said work item," as recited in claims 23 and 28. The prior art is not directed to using a copy of the work item to either generate a coherency signal or to modify a status bit of the status register, in a method, machine-readable medium, apparatus, or computer system, as claimed.

Therefore, dependent claims 5-9, 15-19, 23-26, and 28-30 are allowable.

Conclusion

13. A shortened statutory period for reply is set to expire THREE MONTHS from the mailing date of this communication. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this communication.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna K. Mason whose telephone number is (571) 272-3629. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on (571) 272-3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKM



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